Synopsis on Essays on digital transformation journey of organizations

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Submitted
by
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Chapter 1 Introduction to Digital Transformation

Digital Disruption has transformed the mentality of organizations previously from "survive and thrive" to now "evolve or die"

Edwin Louis had once said, "Maturity comes not with age but with the acceptance of responsibility. You can only become young once but immaturity can last a lifetime" and as it comes to organizations in the world of today, an organization can not risk being immature. A mature organization is well established, has consistent growth, a known product, and customers who are loyal. Maturity in organizations is defined as the degree of completion or perfection of the transformation planned for an organization or desired by them (Lahrmann et al., 2011). Maturity in organization is methodical improvement in the processes of organizations to achieve higher productivity in a stipulated time (Hammer, 2007). Maturity in organizations is an evidence of measurement and management practices mapped to the strategic objectives of the organization (Pedrini et al., 2018). It is incorrect to assess the maturity of an organization based on its size and age, this is similar to what Edwin Louis said above. The reaction of organization to its external environment is learned and is not very instinctive. Maturiy of organization is not related to the age of the organization. Organization's reaction to its external environment is generally learned rather than instinctive. However, the maturity of an organization does not necessarily relate to its age (Thordsen et al., 2020). Mature organizations usually have well-established processes and practices in place for the resources to follow (Karlsson et al., 2010).

It has been proven wrong to implement detailed processes in an immature organization assuming things will work well and doing this only to ensure a checklist is complete. The entire paradigm shift towards maturity needs to be gradual and steady to lead to positive results. Transformation in organizations is difficult to implement (Deline, 2018) and up to 70% of large organizational changes fail (Barrett & Stephens, 2016, 2017).

Now in the 21st century, a firm or an institution not only needs to be matured; they also need to be digitally matured. That is to understand what the status of an organization's digital transformation journey is (Chanias and Hess, 2016, p. 4). Digital inventions has altered the outlook from "survive and thrive" to now "evolve or die" (Anthony Abbatiello, Sarah Vassy, and Nathaniel Paynter,2017). Digital Disruption is visible in any industry – retail, manufacturing, , telecom, pharmaceutical and that too across the globe. It is now imperative to mature with this disruption and improve the firm's maturity levels along the way and to do this lot of organizations adopt Digital Transformation.

Recognizing where you need to get to in six, twelve and eighteen months helps prioritize focus, energy and investments and the path to get there. Change happens more rapidly when you infuse digital traits into the existing legacy environment.

Despite the multiple technological inventions and their implementation – in any kind of organization - whether in business, public governance, or private life, lead time for real Digital Transformation initiatives takes much longer to launch and organizations face more challenges than it has been expected (Zinder, E., Yunatova, I.,2016).

Successful DT requires an organization to launch a wide range of digital competences and meet specific organization's needs. Digital technology needs to become key to business operations and companies need to think and rethink how to reinvent their models to stay relevant in their respective industries (Carcary, M., Doherty, E., Conway, G., 2016).

Chapter 2 Literature Review

Digital transformation has created new research interests across different streams and industries. (Bharadwaj et.al. 2013, Lucas et.al. 2013, Sertia et.al. 2013). This chapter has a compilation of the reviews from various literature on digital transformation, what triggered the transformation, and the journey of DT that organizations have undertaken. Literature review starts by differentiating the definitions of digitization, digitalization, and digital transformation as perceived by literature. It then details the definition of digital transformation, drivers of digital transformation, digital readiness of organizations, and the adoption of digital initiatives in organizations. The review also discusses the effect of digital transformation and elaborates the impact Covid 19 had on DT in organizations.

Digital transformation is not only the mere digitalization of products and services; it is more about redefining an organization's value proposition (Porter & Heppelmann, 2014).

Digitization is the encoding of analog information into a digital format (i.e., into zeros and ones) such that computers can store, process, and transmit such information (Dougherty & Dunne, 2012; Loebbecke & Picot, 2015; Tan & Pan, 2003; Yoo et al., 2010). Research suggests digitization to change manual tasks to digital (Li et al., 2016; Sebastian et al., 2017) or theorizes it as the integration of IT with existing tasks or activities (Lai et al., 2010; Vendrell-Herrero et al., 2017)

Digitalization describes how IT or digital technologies can be leveraged to modify existing processes (Li et al., 2016). For example, the creation of mobile communication channels that customers can leverage for communication viz a viz the earlier modes of traditional communication (Ramaswamy & Ozcan, 2016). In digitalization, IT serves as a critical enabler to seize new business possibilities by changing existing business processes, such as communication (Ramaswamy & Ozcan, 2016; Van Doorn et al., 2010), distribution (Leviäkangas, 2016), or business relationship management (Baraldi & Nadin, 2006).

Digital transformation is the most widespread phrase. It describes a change that is a more company or organization-wide and leads to the development of new business and process models (Iansiti & Lakhani, 2014; Kane et al., 2015; Pagani & Pardo, 2017). Organizations can use these models to gain a competitive advantage (e.g., Casadesus-Masanell & Ricart, 2010).

In business organizations, organizational transformation, which is technology or digitally more matured, is concerned with using information and digital technologies to impact different aspects of the organization. For example, organizations adopt emerging technologies such as social media, mobile technologies, the Internet of Things, cloud technologies, big data analytics, etc. (Resnick, 2002; Fitzgerald et al., 2013) to enhance their daily operations (Oestreicher-Singer & Zalmanson, 2013; Hanna, 2016). Technologies transform operations in an organization, creating value and bringing different experiences to various stakeholders involved. However, (Kane et al., 2015) suggest that more than simply using digital technologies to drive the digital transformation process is needed and that it also uses digital capabilities, strategies, and talent development.

Various companies are conducting multiple interventions to explore digital technologies to their benefit. These include social networks, mobile, artificial intelligence, and machine learning (Fitzgerald et al., 2013). Bharadwaj et al. (2013) reflect on the digital transformation era as a time for organizations to reconsider the role of IT strategy and think of it as a function that integrates IT strategy and business strategy. Hence, that is the reason organizations and institutes worldwide are facing a change as digital technologies are penetrating all markets and companies (Ebert et al.: 2016). Globalization also puts more pressure and competition on organizations (Westerman et al.: 2011) and pressures them to go digital before others do to attain competitive advantages (Bharadwaj, A, 2000). Companies that are "born digital" (e.g., Amazon, Facebook, and Google) have more power than companies that are more traditional in their approach (Sebastian et al., 2017). Despite all these advancements in digital interventions, digital transformation is taking longer and facing more hiccups and bottlenecks than expected (Zinder et al., 2016). There are examples of organizations that have been unable to keep up with the new digital reality: the bankruptcy of movie-rental Company Blockbuster being one of them (Hess et al., 2016). Digital technology, apart from streamlining operations, also needs to have a monetary benefit, making it evident for organizations to invest in digital (Carcary et al.: 2016).

Although literature recognizes the role of culture in facilitating digital transformation (Pillay et al., 2012) and early academic contributions on IT-enabled business transformation already pointed out the requirement of cultural modifications (Venkatraman, 1994), culture has not played a very significant role in the research for digital transformation. Generalized cultural attributes were proposed to nurture digital transformation success. These were innovativeness (e.g., Fichman et al. 2014), risk-taking ability (e.g., Fitzgerald et al. 2014), collaborative way of working (e.g., Westerman et al. 2011), trial mentality (e.g., Kane et al. 2016; Piccinini et al., 2015), or agility (e.g., Kane et al. 2016).

Globalization is also adding pressure to companies (Westerman, G., Calméjane, C., Bonnet, D., Ferraris, P., McAfee, A.: 2011). Digital transformation alters the means of working for an organization with respect to the increase in the speed of innovation and disruption (Downes and Nunes 2013; Porter and Heppelmann 2014; Westerman et al. 2011).

Digital transformation is the transformation of digital means to do business and deliver value to the customer. However, these digital means are the catalysts for digital transformation, including various digital disruptions – artificial intelligence, analytics, machine learning, chatbots, mobile apps, and many other digital disruptors. Despite the ubiquity and visible impact of digital transformation and resultant new digital business models, the academic literature has so far paid surprisingly little attention to these developments, only recently starting to address the topics of digitization, digitalization, and digital transformation (V. Venkatraman, 2017).

Source	Digital Readiness and adoption of business initiatives
(Rogers, 2003)	When the decision makers realize there is an advantage of launching a digital initiative compared to the legacy or existing technologies, chances of adoption increases.
Grandon and Pearson, 2004; Molla and Licker, 2005; Riemenschneider and McKinney, 2002)	The most significant enabler for adoption of initiatives is the readiness of the firm. It is considered as the most basic it is the most basic prerequisite of the decision to leverage the advantages of technology initiatives
Looi, 2005	For few firms adoption takes place as the pressure from competition is high
Fomin et al., 2005	Few activities have a dependency on the industry specific attributes. Sometimes the size of the organization also has a role to play with bigger organizations having a bigger tendency to adopt more than the smaller companies
Molla and Licker, 2005	Organizational readiness influences adoption more than the factors impacting environmental readiness
Peter C. Verhoefa,∗ , Thijs Broekhuizena , Yakov Bartb , Abhi Bhattacharyaa , John Qi Donga , Nicolai Fabiana , Michael Haenleinc	How to measure the failure of digital transformation journey – KPIs like return on investment, profitability and sales growth, customer experience are significant for firms that engage in digitization and digitalization

Digital Readiness and adoption of business initiatives
Source: Kollmann, Tobias & Kuckertz, Andreas & Breugst, Nicola. (2009).

Organizational Readiness and the Adoption of Electronic Business – The Moderating Role of Nation-al Culture in 29 European Countries

Digitization of society started in the 20th century and accelerated in the 21st century. This encouraged the adoption of digital transformation by many organizations across the globe. Organizational readiness has proved in numerous empirical studies to be the most influential predictor of e-business adoption; it is the essential prerequisite of the decision to try to harvest the benefits of e-business (Grandon & Pearson, 2004; Molla & Licker, 2005; Riemenschneider & McKinney, 2002). Specific e-business activities depend on specific industry characteristics; large corporations are likelier to adopt e-business than SMEs (Fomin et al., 2005). Adoption is significantly more influenced by organizational e-readiness than by environmental readiness.

Digital transformation impacts are the outcomes experienced by the firms as an outcome of the transformation process. These impacts can be classified as client-focused and firm-focused. Client focus impacts customers, and the firm focused impacts the organization. The impact on both stakeholders can be positive or negative. The ultimate impact that organizations want to leverage on digital transformation is value creation for customers and organizations.

Westerman et al. 2014 mention that DT takes place in three key areas of the firm: client experience, business operations, and business models, suggesting that the effects of digital transformation in business organizations are felt in these three key areas.

Covid's impact on digital transformation in an organization

The emergency caused by the COVID-19 pandemic has instigated SMEs to enhance the quality of their products or services and develop various strategies for offering goods or services based on their business concerns. The digital approach will work well if SMEs have digital transformation so that they can compete intensively.

This global transformation is called the Fourth Industrial Revolution (i.e., Industry 4.0). This transformation aims to make everything around us "smart," which makes it more of a digital and less of a physical transformation (Chou, 2019). Using digital gears enables corporations to become more customer-focused and, thus, more well-organized when responding to market demands. However, according to Chou (2019), companies that have not attained "digital readiness" cannot be transformed in the new digital era since they would be susceptible to many obstacles that would keep them from taking advantage of digital transformation. Digital transformation is an endless process as it is a phenomenon that keeps getting updated to improve one or the other KPIs in an organization.

Many businesses, well before COVID-19 spread, pursued digital transformation strategies to improve their internal, external, and holistic organizational dimensions (Hess et al., 2016). The definition used most often in the Information System (IS) literature for Digital Transformation (DT) is provided by Fitzgerald et al. (2013), who defines it as "the use of new digital technologies (social media, mobile, analytics or embedded devices) to enable major business improvements

(such as enhancing customer experience, streamlining operations or creating new business models)."

COVID-19 is not only a disorderly period of instability and danger but also a period of accelerated use of digital technologies (Karabag, 2020). Before the pandemic, organizations were aware of the importance of DT. However, the implementation process could have been faster for most of them due to different factors such as complexity and cost (Scott, 2020). During the pandemic, digital transformation was turned into a priority and an urgency globally (Lesser et al., 2020). Looking ahead to the post-COVID-19 era, business strategies are facing major transformations (Kodama, 2020). They are now forced to rethink their business patterns more than ever to ensure the crisis controls them as little as possible and their customers continue to receive sufficient services. It is more like a wake-up call to organizations and governments.

Looking at the positive impacts of COVID-19 in driving DT, there is pressure to enable a digital ecosystem, digital learning, and agile business models for business survival and sustainability.

Why India as a geography to study

India is a developing nation, and the development has been on a rising curve for the last 25 years. The govt launched the Digital India program of India around 15 years back. The vision of the program is to convert India into a country that is empowered with digital means and an economy with no limit to knowledge. Digitization is one of the prominent transformations in the country, the organizations in India, and the population of India. Digital infrastructure has only advanced globally in the previous years, and India is the key market that has seen this change. With the support of its youthful population and quick expansion, India is leading the way in this race of digital and technical advancements. Digital India considers a three-tiered strategy that includes building the necessary infrastructure, establishing corporate governance, and giving each citizen access to the Internet. India wants to be transformed into a knowledge economy and technology-enabling society (Sharma, 2016). By enabling digital access to information, which would promote openness and public accountability, it seeks to promote government accountability. Similar to many emerging nations, India has a sizable informal economy.

The perception that in today's time, the country mainly depends on online or internet-enabled platforms to continue spinning must be sufficient for people to enhance their technology skills and adoption. Technology is fast-paced and developing, and people must constantly master modern digital skills and approaches. They know that the digital space may do much more than keep people up to speed. For enterprises, it represents a world of opportunities for
development, client interaction, and eliminating rivalry (Sangtani et al., 2022).

Chapter 3 Gaps in Literature

In the previous chapter, there was a detailed discussion on digitization, digitalization, and digital transformation. Factors that trigger DT, the digital readiness of organizations when embarking on this journey of DT, and the adoption of digital initiatives in organizations were also discussed. A paper by Kollmann, Tobias & Kuckertz, Andreas & Breugst, and Nicola as part of the literature. (2009) "*Organizational Readiness and the Adoption* of Electronic Business" has been reviewed. The paper has determined how digital readiness demonstrates the relationship between readiness of firms and the acceptance of initiatives. The paper covers the four characteristics of the Seven key features that attain the spirit of Digital readiness: - Robbins, 2010.

The seven characteristics as detailed by (Robbins, 2010)

- **Innovation and risk-taking**: Employees are encouraged to be creative and take risks, which produces creativity. Invention is also a form of effectiveness and efficiency
- **Attention to detail**: Personnel are expected to be detail-oriented. Details always establish success or failure
- **Outcome orientation:** The focus is mainly the result or the ultimate outcomes and the steps or processes used to achieve those goals
- **People orientation:** The factors leading to the decisions by the management tend to affect and impact the people of the organization
- **Team orientation:** An event at the workplace is planned and organized among teams, and the members of the team for them to bond among themselves
- **Aggressiveness:** Behavior of the employee at work. Whether he is aggressive, competitive, or patient and easy going
- **Stability:** Whether the organization is looking at maintaining the status quo or as is of the circumstances or keeps growing and adopting more initiatives

The paper has the following findings on the four characteristics of Robbins 7 digital characteristics. The 4 characteristics are:

- "Power distance (PD) will moderate the relationship between organizational readiness and adoption; tolerance of hierarchical or unequal relationships i.e., Team Orientation by Robbins 2010
- The value of uncertainty avoidance (UAV) will moderate the relationship between organizational readiness and adoption; the degree of acceptance of uncertainty, that is, the willingness to take risks i.e., Innovation and risk-taking by Robbins, 2010
- Cultural value of individualism (IDV) does not moderate the relationship between organizational readiness and adoption; individual's accomplishment i.e., People orientation by Robbins 2010

• Masculinity (MAS) will moderate the relationship between organizational readiness and adoption; value of assertiveness; though some cooperation is needed Aggressiveness by Robbins, 2010”

Power distance, masculinity, and uncertainty avoidance were found to substantially impact the connection between readiness of the organization and the adoption of these initiatives.

Basis the study of Kollman and drawing a parallel of his findings with Robbin's theory , the following observations have been made, and the corresponding gaps have been identified

- **Observation1**: Research suggests the key drivers for embarking on the DT journey are – Digital tools, digital skills, strategies, values, and business models
- **Gap 1**: There is a limited study on what organizations need to do to increase readiness and Adoption of initiatives

- **Observation:** The paper has definitions on the four cultural characteristics of Robbins 7 digital culture characteristics
- **Gap 2**: Stability, Attention to Detail, and Outcome Orientation are the 3 of the seven primary characteristics not emphasized by Kollmann et. al. in Organizational Readiness and the Adoption when studying dependency of Organization readiness on the Adoption of initiatives

- **Observation**: Drivers of DT, Position of digital readiness in the digital transformation journey and the adoption of digital initiatives are studied in silos
- **Gap 3**: There is limited literature on the interdependency of these studies to understand the end-to-end journey of digital transformation in organizations

- **Observation**: The research published by Kollmann, Tobias & Kuckertz, Andreas & Breugst, and Nicola is restricted to 29 European countries
- **Gap 4**: The research does not look at other countries from the same lens

The value add from literature will evolve later; however the anticipated value added from the proposed research is as below:

1. It is imperative to value that apart from triggering DT projects in organizations, what else should companies do to increase readiness and Adoption of digital?
2. As part of the research, idea is to touch upon the remaining three characteristics (Stability, Attention to Detail, and Outcome Orientation) to understand how readiness and Adoption are moderated.
3. Also, to understand more profoundly the success and failure of firm’s digital transformation journeys, objective is to explore end-to-end journey of DT.

4. The research published by Kollmann, Tobias, Kuckertz, Andreas, and Breugst, Nicola, is restricted to 29 European countries. It does not examine other countries, including India, through the same lens.

Below is a snapshot of how the observations map to the Gaps and the value added from the research.

Observation	Gap	Value Add (anticipated)
O1.Research suggests the key drivers for embarking on the DT journey are – Digital tools, digital skills, strategies, values, and business models	G1. There is a limited study on what organizations need to do to increase readiness and adoption of initiatives	It is main to understand that apart from triggering DT, what more should the companies do to increase readiness and adoption
O2. The paper has findings on the four cultural characteristics of Robbins 7 digital culture characteristics	G2. Stability, Attention to Detail, and Outcome Orientation are the 3 of the 7 primary characteristics not touched when studying dependency of Organization readiness on adoption	Study remaining 3 characteristics from Robin's 20 to understand how the readiness and adoption are moderated using these elements
O3.Drivers of DT, Position of digital readiness in the digital transformation journey and the adoption of digital initiatives are studied in silos	G3. There is limited literature on the interdependency of these studies to understand the complete journey of DT in organizations	Also, to understand deeper on the success and failure of DT journey of organizations, the authors would intend to explore the end to end journey of DT
O4. The research published by Kollmann, Tobias & Kuckertz, Andreas & Breugst, Nicola is restricted to 29 European countries	G4. The research does not look at other countries from the same lens	The research does not look at other countries from the same lens which includes India

Mapping the Observation from Literature to the Gaps from literature and the value add or theoretical and managerial contribution

Source: Authors interpretation and comprehension from literature

From the above table observations have been mapped from literature to the gaps identified and the value add to be derived by addressing the gap.

Chapter 4 Research Objective

As the literature suggests, digital transformation is the utmost critical journey for organizations to embark upon (Westerman et al., 2011). Technology is advancing quickly, including Social, social media, artificial intelligence, and machine learning, and companies need to adopt the change (Fitzgerald et al., 2013). This is needed to take advantage of the massive prospects it opens the doors to and stay relevant in this ambiguous world. This study aims to study DT and what organizations mean by it in present world. It helps to understand how Cultural values demonstrate the relationship between organizational readiness and the adoption of initiatives (Kollmann et al., Andreas & Breugst; Nicola, 2009).
This encouraged the adoption of digital transformation by many organizations across the globe (Margaret Rouse, August 2017).
Organizational readiness has proved in numerous empirical studies to be the most influential predictor of e-business adoption; it is the essential prerequisite of the decision to try to harvest the benefits of e-business (Grandon & Pearson, 2004; Molla & Licker, 2005; Riemenschneider & McKinney, 2002). This is why the objective of the study is to understand the DT journey from the below three perspectives:

1. Factors that lead to digital transformation for an organization (Fitzgerald et al.: 2013)
2. Digital readiness of an organization when embarking upon the digital transformation journey (Grandon & Pearson, 2004; Molla & Licker, 2005; Riemenschneider & McKinney, 2002)
3. Adoption of digital initiatives in the DT journey of an organization (Margaret Rouse, August 2017

While seeking answers to the above three questions, the objective was to understand organizations' digital transformation journeys holistically.

- Current State: Understand the organization's existing digital capabilities, processes, and infrastructure to identify strengths, weaknesses, and areas for improvement
- Business Needs: Identify the specific business needs, challenges, and opportunities that can be addressed through digital transformation. This involves understanding the organization's strategic goals, customer requirements, and market trends.
- Define Digital Strategy: What was the digital strategy that associates with the organization's overall business approach (Matt et al.: 2015)? This includes setting objectives, defining target outcomes, and establishing a roadmap for digital transformation initiatives.
- Assess Organizational Readiness: Understand what was the organization's readiness for digital transformation in terms of its culture, leadership support, talent, and change

management capability (Grandon et. al., 2004; Molla et. al., 2005; Riemenschneider et. al., 2002)

- Optimize Business Processes: Comprehend the identified opportunities to streamline and automate business processes through digital technologies. Understand the potential impact on efficiency, productivity, cost savings, and overall operational performance.
- Measure and Monitor Advancement: Determine metrics and execution indicators to measure the realization of digital transformation initiatives. Continuously monitor progress, identify parts of advancement, and make necessary corrections to the digital transformation strategy.

Below is how the literature supports the research objectives and how these objectives will help fill the gaps in the literature:

Literature: Factors that lead to digital transformation for an organization (Fitzgerald et al.: 2013)
Objective 1: Understand the Drivers of the digital transformation journey of Organizations, including the culture of the organization (Gap 3)

Literature: Digital readiness of an organization when embarking upon the digital transformation journey (Grandon & Pearson, 2004; Molla & Licker, 2005; Riemenschneider & McKinney, 2002)
Objective 2: Understand Digital Readiness as an antecedent to the digital transformation journey. Also, focus on the three remaining elements of Robin's org culture model (Gap 1, 2, and 3)

Literature: Adoption of digital initiatives in DT journey of the firm (Margaret Rouse, August 2017
Objective 3: Understand the components that impact the acceptance of digital initiatives in organizations (Gap 2 and 3)

With the above three objectives identified and mapped to the gaps addressed in the research, the next chapter debates the research and sampling methods studies and chosen.

Chapter 5 Research Methodology

Introduction to Qualitative Research Methodology

In Chapter 2, the literature review helped identify the principal factors that influence or contribute to executing the DT journey in organizations. As evident in the outcome of the literature study, very little studies have explored the concept of the DT journey from identifying factors to adoption in emerging economies like India. In this chapter, the spotlight is on the methodology used for research and the basis behind the chosen research methodology, including the sampling used for data gathering. This chapter seeks to run the detailed process including the outcome of the qualitative phase of the research study. To do a deep dive study on this topic, a qualitative approach was used for the study's first phase. Using a qualitative method at this stage was considered appropriate (Maxwell, 2005) as the author wanted to identify the thematic factors that determine the factors leading to the digital transformation journey to digital readiness in an organization and the adoption of the initiatives.

Qualitative Research analyzes information through behavior and language in a standard setting (Lincoln et. al., 985.) It analyzes expressive information that is usually not captured in quantitative data. This is more about the beliefs, feelings, values, and motivations that form the subsets of behaviors (Crabtree BF et. al. 1992.) The objective is to gather the identification of human behavior and the answer of what led to that behavior. Smith defines *Qualitative research* as empirical, stating, “The researcher collects sense data about the phenomenon under study and works on them in some way organizes them, and uses the data to generate ideas, hypotheses, and categorical definitions to test them. After determining how focused the research method is, a small number of participants is legitimate as a source of information”.

Characteristics of Qualitative Research

According to Burns and Grove, 2009, qualitative research is a systematic, subjective approach to highlight and explain the experiences of the stakeholders involved (Grove, S. K., Gray, J. R., & Burns, N, 2014). Further, Holloway and Wheeler's 2002 qualitative research allows researchers to entirely discover behavior mechanics, different views, and life encounters. This will also allow us to find complications and intricacies of the situation.

Qualitative Research Designs

The different qualitative Research designs are:

1. Phenomenological research methodology
2. Ethnographic research methodology
3. Grounded theory research methodology
4. Historical research methodology

5. Narrative research methodology
6. Case study research methodology

The six qualitative designs are described below.

Phenomenological studies observe experiences from humans through the various descriptions they provide. This research is specifically used in areas with limited knowledge (Donalek, 2004). This involves philosophical solid foundations and usually encompasses conducting interviews (Giorgi, 2009; Moustakas, 1994). Mariano (1990) asserted that this may not be easy to understand for those with limited background in philosophy. Streubert and Carpenter, 2002 also view this study as soft science. The beginning researchers are advised to get guidance from a mentor with critical and systematic experience in this research.

Ethnographic studies usually apply to research involving data gathering and further analysis of cultural groups. This states how one world's behaviors make sense from a different world's point of view. Cameron (1990) states that ethnography means "learning from people." As per Leininger (1985), ethnography is the methodical procedure of observing, understanding, listing, illustrating, and drawing inferences from a culture's experiences or particular patterns. This is done to understand the experiences and relationships of the people in their familiar environment".

Grounded Theory is another qualitative research methodology developed by two sociologists, Glaser and Strauss (1967). It is called grounded theory as it pertains to the studies and research where the theories and concepts are deeply grounded in data. This involves both inductive and deductive approaches. Field and Morse (1985) state that theories, models, frameworks, and constructs are grounded in the data. The hypotheses are tested as they arise from the research."

Historical Studies pertain to the studies or research that involves the connection, location, evaluation, and analysis of historical data. The objective of historical research is not only to discover the events of the past but also to find the relation between the past happenings to the present and the future (Leininger, 1985). In this research, once the area of interest and the pain point is identified, the literature is assessed, followed by a list of the research objectives and questions, thereby collecting and analyzing data. Historical researcher must develop the "inquisitiveness, perseverance, persistence and skepticism of the detective"

Narrative research is an inquiry from humans in which the researcher studies the lives of individuals and asks them to provide stories about their lives (Riessman, 2008). The researcher retells this information into a narrative sequence of events.

Case Studies are in-depth analyses of people or groups of people. Patricia Benner contended that this mode of study helps us formalize knowledge from experience or experiential knowledge.
Data for the case study approach is collected through –

- Answers to questions in writing or through forms or verbal
- Open ended Interviews
- Observations from case stories
- Documented experiences

Case stories are time-specific and restricted by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Stake, 1995; Yin, 2009). One key element of data collection in this manner is observing participants' conducts during their engagement in activities.
A case study is an in-depth analysis of a story from various views and perceptions. Cases are defined within a framework for debate from various viewpoints.

Relevance of this case study for the scope research:

The case study method is used in a wide range of disciplines and fields in the social sciences to investigate different phenomena related to individuals, groups, and organizations (Yin, 1984).
Easton (2010, p. 119) defines *case research* as a research method that involves studying a few journeys or situations about which information is collected using multiple sources.
Various publications on DT were studied. Idea was to capture the article's name, authors, Publication, and research methodology. 14 different articles published in various journals that used case studies as the research methodology were found.
Since the case study has been recognized as the main research method utilized in the field of digital transformation (Cheng et al., 2014), investigating case studies can reflect and update the current state of concepts and themes.

Why case study is a choice of research methodology for me is justified below:
Literature: The research field should be identified; that is, the "class" or "subclass" of events within which a single case or several cases are instances to be studied (George & Bennett, 2005)
Justification: For our research, digital transformation was chosen as the "Class," and the three phases of digital transformation—factors leading to the digital transformation journey, digital readiness of digital transformation, and adoption of digital transformation—are the subclasses of the event.

Literature: Case study is appropriate for theory expansion as this takes care of the following responsibilities in a more appropriate fashion than other methods (for example, see George and Bennett 2005): – Process tracing that maps the causes and the outcomes of the events; detailed

study of hypothesis and historical explanations; creation of new hypotheses and new questions to study inferred from various cases
Justification: While studying the digital transformation journey, the levers and drivers that led to organizations' adoption were also researched. This also captured the experiences of various stakeholders involved in this journey.

Literature: A case study helps the researcher find answers to “how” and “why,” This is primarily helpful when the behavior of the interviewers for the study cannot be influenced and when the background conditions need to be studied and analyzed as they are relevant to the phenomenon under study or when the boundaries between the phenomenon and context are not clear (Yin in Baxter & Jack 2008)
Justification: For the research, experiences of the stakeholders involved were studied and the process behind the transformation the organizations went through were understood. The background conditions of the organizations that were part of the transformation journey were also studied.

Literature: Case study also provides an opportunity to compare cases, permitting a more dynamic explanation-building process and understanding of the effects of contextual variables (Chiesa & Frattini, 2007)
Justification: The research allowed to understand how different companies underwent their journey and also helped study their responses in the same industry. The study also helped analyze the resemblances and distinctions between companies in the same industry. Case studies allow us to examine one or multiple cases or stories. When studying one case, it is a singular case study. When multiple cases are examined, it is called a multiple or plural case study. Each case is studied in multiple case studies as if it is a single study. Comparisons are then made to other cases.

Literature: As per standard case study practices (Yin, 2017), a multi-pronged methodology was taken by accumulating data from several sources, namely, interviews, document analysis, and research (e.g., pitches, events, and online videos)
Justification: The study used data from interviews, events, and case studies published online. The studies in scope also used stories with a longitudinal time frame expanding over the entire course of study for some organizations and pre- and post-COVID time for a few others. Retrospective case studies, where data is collected from past and historical stories, were also part of the study. In these, the researcher studies a phenomenon.

Similar research in digital transformation which have used case study methodology have been tabulated below in Table 11.

S.No.	Paper	Authors	Methodology	Publication
1	"Fostering digital transformation of SMEs: a four levels approach"	Antonello Garzoni, et. al.	Case Study	Emerald Insight
2	"Understanding Digital Transformation Initiatives: Case Studies Analysis"	Tomičić Furjan et. al.	Multiple-case study approach to gather data from experts who participated in successful Digital Transformation initiatives	Business Systems Research
3	"Technology Impact Types for Digital Transformation"	Key Pousttchi, et. al.	Multiple, concept-oriented case-study analysis along with literature review	Business Informatics and Digitalization
4	"Mastering digital transformation: the path of a financial services provider towards a digital transformation strategy"	Simon Chanias	Interpretive case study	
5	"Digital Transformation Case Studies Across Industries – Literature Review"	A. Kutnjak et. al.	Comparison of case studies	"International Convention on Information and

				Communication Technology, Electronics and Microelectronics (MIPRO)"
6	"Digital Transformation Is Not About Technology"	Behnam Tabrizi et. al.	Case study and experince from different organizations	
7	"Digital transformation at logistics service providers: barriers, success factors and leading practices"	Marzenna Cichosz et. al.	series of nine case study analyses of global LSPs	The International Journal of Logistics Management
8	"Mastering the Digital Transformation Process: Business Practices and Lessons Learned"	Lucija Ivančić et. al.	conducting three case studies to address the research objectives	Technology Innovation Management Review
9	"Organizational readiness for the digital transformation"	Marisa A Sanchez et. al.	A case study research - single organizations	Journal of management and research
10	"The digital transformation of Swiss small and medium-sized enterprises: insights from digital tool adoption"	Corin Kraft et. al.	multiple-case study, with four theoretically sampled cases	Emerald Insight

11	"Building Blocks for Blockchain Adoption in Digital transformation of sustainable Supply Chains"	Funlade T Sunmola et. al.	Literature Review and Case study	Science Direct
12	"Digital Transformation Insights and Trends"	Igor Pihir et. al.	Literature Review and Case study	Conference on Information and Intelligent Systems
13	"Influencing factors of digital transformation: management or IT is the driving force?"	Andrea Ko et. al.	Literature Review and Case study	Emerald Insight
14	"Measuring industry digital transformation with a composite indicator:"	Larysa Yakymova et. al.	35 cases	Journal of International Studies

Aggregation of digital transformation papers which have used Case study as the research methodology

Source – Author's findings

With the above aggregation of studies that have used case study methodology as a research method, along with the justification from the literature on why case study is the most preferred research methodology for this study, multiple case studies with a longitudinal time frame seem to be the right choice of research methodology for my study.

Sampling Methodology

Once the research methodology was finalized, the interview process for research and initiated the sampling for interviews was commenced. The sampling for qualitative and quantitative research are different from each other. In quantitative research, the requirement is for a representative sample, a small number of individuals who can represent a more significant population. As per

Neuman (2009), researchers have two reasons for using random sampling: one, for time and cost-effectiveness, and two, for the accuracy of the research and findings. Qualitative researchers focus less on the representation of the sample or on the techniques for drawing probability samples.
Flick (2009) suggested that the individuals or cases chosen for the case study should be relevant to the research topic. Hence, for this research, the main idea was to study the digital transformation journey of organizations based in India who have been through the journey and are from a traditional/ new age industry. Cases were selected considering the initiatives were big enough for the organization to create a strong impact. The organizations were chosen from different sectors. The companies chosen were relevant in the market. The organization's service/product offerings were spread across different areas, such as retail, finance, and telecom. The organizations started their journeys only in the last ten years, with the total journey duration varying from organization to organization.
Glesne and Peshkin (1992) suggested that the number of participants could be decided by looking at the data during data analysis. If no new information is reached during case studies and stories become repetitive, then it is said that the data has reached a saturation point.
Apart from relying on the researcher's imagination and judgment, the methodology for participant selection in qualitative research also depends on multiple purposes (Purposive sampling) of illuminating and interpreting (Glesne & Peshkin, 1992). As per Glesne, the method is suitable for samples with different characteristics. This method is highly recommended for embedded single-case design when the unit of analysis is individuals of different characteristics clustered under one group (organization, community, etc.).

Purposive sampling is useful for case studies in three situations:
(1) selection of unique cases/stories that are incredibly informative
(2) selection of members of a difficult-to-reach, specialized population
(3) identification of particular types of cases for in-depth investigation

As per Noriah (1999), the methodology is used to gain in-depth knowledge of the issue and to form patterns that emerge from the interview and the study. In this method, the researcher selects cases based on new insights gathered from the data, which is analyzed simultaneously with the selection of samples.
The researcher is the most important instrument in any qualitative research (Glesne & Peshkin, 1992). Inevitably, the decision to select or not to select a particular individual, group of individuals, or even organization as the unit of analysis lies in the hands of the qualitative researchers. The sample should be selected from the various stratified groups and also maintain a nonbiased stand in the selection process.

Snowball or network technique (also referred to as chain referral or reputational sampling) is another sampling method. The first snowball was established using recommendations from Gleshne and Peshkin (1992). One of the criteria for judging the quality of research designs is

establishing the domain to which a study's findings can be generalized, thereby addressing the issue of external validity. According to Yin (2009), case study methodology gives rise to the central issue of external validity problem, which has been one of the main bottlenecks in case studies. As per critics, a single case study offers a poor basis for generalization.
The organizations in scope have either completed the digital transformation journey successfully, have failed the journey or are still in the process of digital transformation. The organizations considered are a mix of digitally born firms or traditional firms that wish to transform digitally. The firms considered are Indian companies or Indian entities of multi-national firms.

Expert interviews are a specialty within the semi-structured interview technique, which allows deliberate determination of the sample as suited for the research context (Abels & Behrens, 2009; Bogner, Littig and Menz, 2009; Kallio et al., 2016; Mafi et al., 2018). Expert interview techniques also lend themselves well to the determination of important market success factors (Lange, Mendling, and Recker, 2016; Nahar et al., 2006; Peffers, Gengler and Tuunanen, 2003; Pfoser, Treiblmaier, and Schauer, 2016), firm capabilities (Chan & Reiner, 2019; Mangematin & Nesta, 1999; Urueña, Hidalgo and Arenas, 2016; Wang, Lu and Chen, 2008) and impact of changes in an industry (Arnold, Kiel and Voigt, 2016; Brettel et al., 2014; Dewick et al., 2006).

The sampling strategy for the expert interviews was framed to seek depth of information rather than breadth to explicate organizations' digital transformation journey (Felix, Rauschnabel, and Hinsch, 2016). Since the objective at this stage of the study was to gain a deeper understanding and explore the study's interest area, the sampling was non-probabilistic (Ritchie *et al.*, 2013). This means that the experts chosen had in-depth knowledge and experience of the digital transformation journey, not necessarily experience with multiple journeys.

It has been ensured that the organizations considered have been part of the journey over the last 6 years to ensure the experience of the experts is recent. Additionally, since the time frame was between 2018 to 2024, impact of pandemic has also been scoped in as part of the research. The organizations considered are a mix of digitally born firms or traditional firms that wish to transform digitally. The firms considered are Indian companies or Indian entities of multi-national firms.

Experience View: 50% of the experts have experience between 14 – 18 years. Everyone interviewed had experience of more than 10 years. 4 experts had experience of more than 20 years. Most of the experts in this experience range were the decision makers of the transformation journey and would have a key role to play in the journey for organizations. For few experts the total experience is more than the age of the organizations itself. Total cumulative experience of the experts interviewed is 396 years, which maximum cumulative experience from Strategy department.

Industry View: Retail, Media, FMCG, Telecom, Food, energy, and Finance are the industries experts belonged to. The organizations were a mix of digitally born or aiming to transform digitally. Most of the firms belonged to retail sector. The second most covered sector is FMCG. This could be as a result of 1) higher number of digital transformation initiatives are launched in the consumer facing industries (Retail and FMCG) 2) the sampling was done using Snowball which resulted in experts belonging to same network. The least number of experts belonged to Energy and telecom sectors. Interestingly, as per the experts, these 2 sectors have a high dependency on government and external bodies for regulation.

Thematic Saturation in Expert Interviews

The number of interviews required to identify the significant themes and patterns for the study is critical for ensuring that all likely possibilities have been explored. The minimum number of interviews required to achieve this objective has been suggested to be as low as ten (Glaser & Strauss, 1967) to as high as 20-30 (Saldana, 2015). Achieving thematic saturation is essential in the expert interview technique (Guest, Bunce, and Johnson, 2006; Hennink, Kaiser, Marconi, 2017). It helps ascertain whether the number of interviews conducted has contributed to the research objective of identifying the significant factors in the research context and whether further interviews would not lead to the discovery of new information (Green & Thorogood, 2004; Lowe *et al.*, 2018). Lowe *et al.* (2018) studied the quantification of thematic saturation in interviews and opined that although 100% is impossible, reasonable saturation above 85% can be achieved.
Thematic saturation was achieved after 22 interviews as no novel insights were discovered, and the process was closed after conducting 26 interviews (Guest, Bunce, and Johnson, 2006). Respecting the ethical aspects of the research process, the participants were assured that all responses would be kept confidential and used only for the specific purpose of the study (Lancaster, 2017; Richardson & Godfrey, 2003).

Chapter 6: Interview Questions

Open-ended questions were used as guiding principles to initiate and take forward the interviews and discussions with the respondents. The questions were formed using the literature as a reference and also keeping the research objective and gaps found in the literature in mind.

Drivers of digital transformation journey

For this phase of digital transformation journey, following questions were identified from the reference of the literature depicted in Table 14 below.

- What triggered the digital transformation journey for your organization?
- What role did the competition have to play for initiation of this journey?
- How much of influence do the external factors have to play in the digital transformation journey of your organization?
- What role if at all did Covid 19 play in your decision and journey of digital transformation?
- What role does government regulation have to play in the digital transformation journey?

Digital Readiness as an antecedent to digital transformation journey

For this phase of digital transformation journey, following questions were identified from the reference of the literature depicted in Table 15 below.

- What are some of the biggest roadblocks that mid-size businesses face along the journey?
- What are the best ways to budget for, and finance the digital transformation?
- What according to you is the most crucial element needed to initiate the digital transformation journey?
- What factors are needed to promote digital readiness in an organization?
- What is your definition of being digitally ready in an organization?
- What processes does your organization follow for digital transformation?

Factors impacting the adoption of digital initiatives

For this last phase of digital transformation journey, following questions were identified from the reference of the literature depicted in Table 16 below.

- How do you know whether the digital transformation is working at your organization?
- How do you plan to communicate the change?
- Are your teams collaborating across functions?
- How would you comment on usefulness and ease of use as factors for digital adoption in an organization?

Chapter 7 Data Analysis and Theme Generation

Using the multiple case methodology as rationalized in the previous chapter, selected employees of the chosen organization were invited to discuss the digital transformation journey undertaken by the organization. The questions as part of the interview were meant to be simple and direct, with the main focus being understanding employees' perspectives on the organization's journey. The questions used for the interview have been defined in the previous chapter.

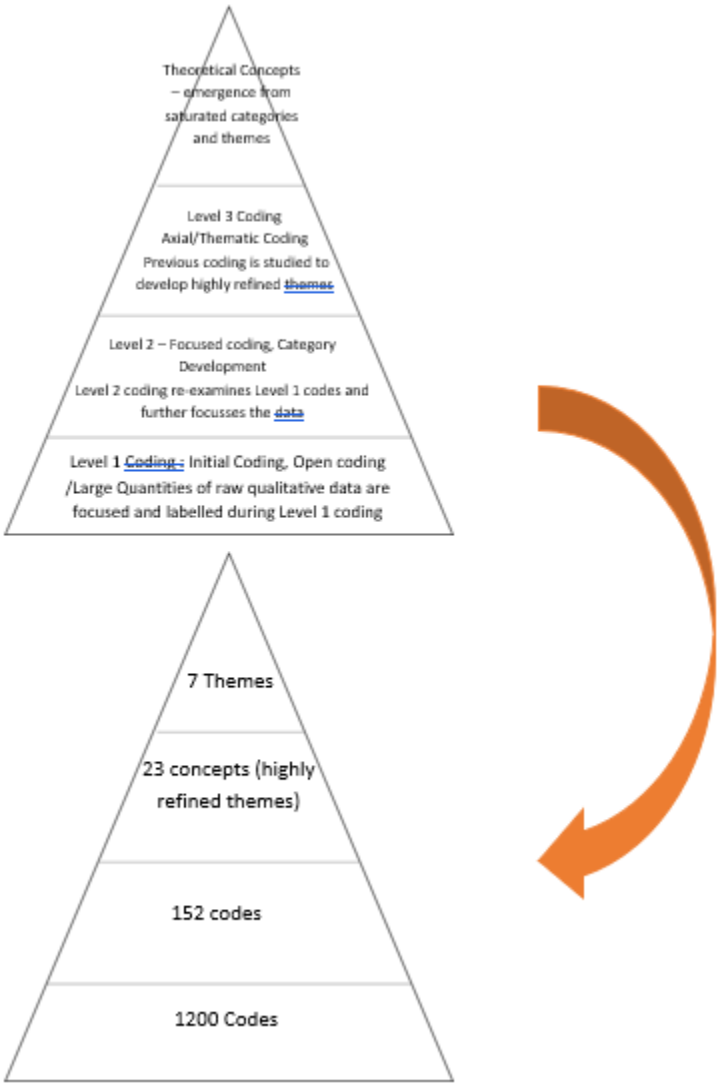
Codes and Themes generation

Codes are the minor analytical units that contain the data elements related to the research question and further facilitate the formation of higher patterns or themes (Clarke & Braun, 2017). Data coding has been recognized as the crucial link between data collection and inferences drawn from the data (Bryant & Charmaz, 2007; Saldaña, 2015). In order to categorize the interview data into familiar patterns and themes, coding them systematically was essential for further analysis (Clark & Vealé, 2018; Schreier, 2012). This required transforming the voice recordings into documented transcripts to represent the experts' opinions as accurately as possible. The emphatic statements were retained in their original form. Verbatim transcription in expert interviews provides a robust platform for analyzing and interpreting interview data to identify areas of importance (Halcomb & Davidson, 2006; Loubere, 2017). A three-cycle coding process was followed to develop common trends (themes) from the interview transcripts (Rogers, 2018; Schreier, 2012). Cycled coding is helpful in better organizing and analysis of qualitative data (Rogers, 2018; Saldaña, 2015).

Post-interview, the **narrative was coded using the Delve Tool.** The initial concepts in the data were analyzed, and they were grouped into provisional categories and first-order concepts (open coding)—Level 1 coding.
In the next step, the focus was used to narrow down the codes **to a relatively few Level 2 codes.** Level 2 coding is commonly called focused coding or category development.

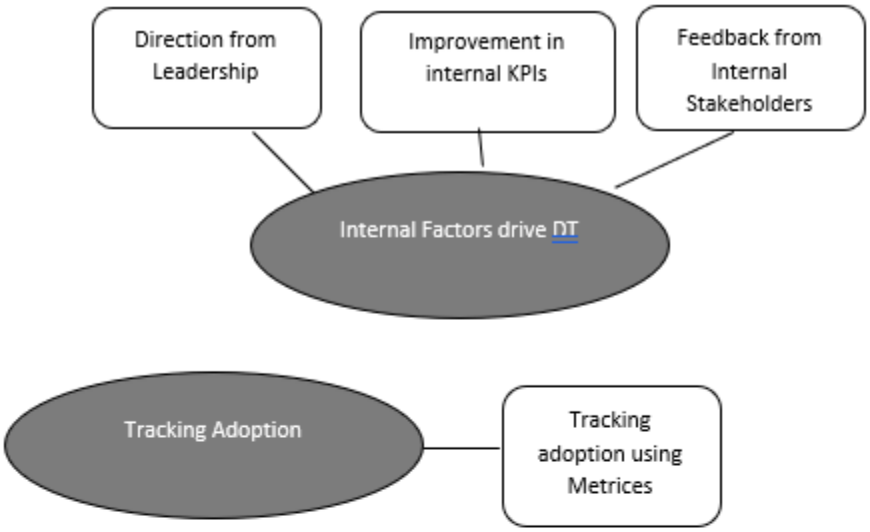
Next step involved a refined focus, using the gradual and progressive convergence of ideas from Level 2 as the basis of inquiry. Themes are refined during this step as ideas approach a critical density. Level 3 coding is commonly called axial coding or thematic coding.
Once axial coding was done, common patterns between and among these provisional categories were identified, which generated **highly refined themes.**
Post this, the **theoretical concepts** emerged from the refined themes.
In sum, reviewing and analyzing the extant literature, 1200 codes were generated, leading to 152 coded insights being generated within the digital transformation field: 23 first-order concepts and seven second-order themes.
The seven second-order themes represent core themes across the papers and finally constitute two aggregate dimensions: people and culture. In conclusion, the authors defined digital transformation

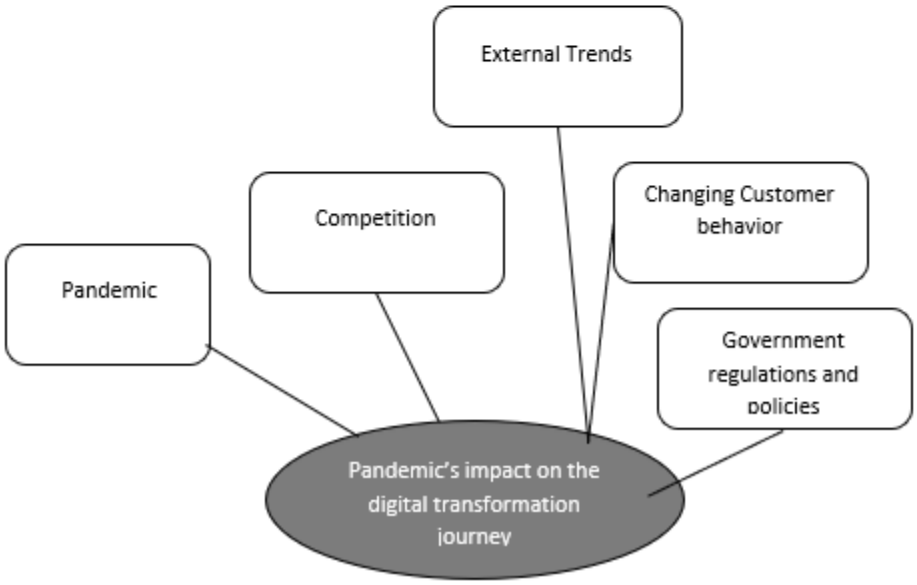
as people-driven organizational transformation triggered by the adoption of technology-driven digital disruptions.

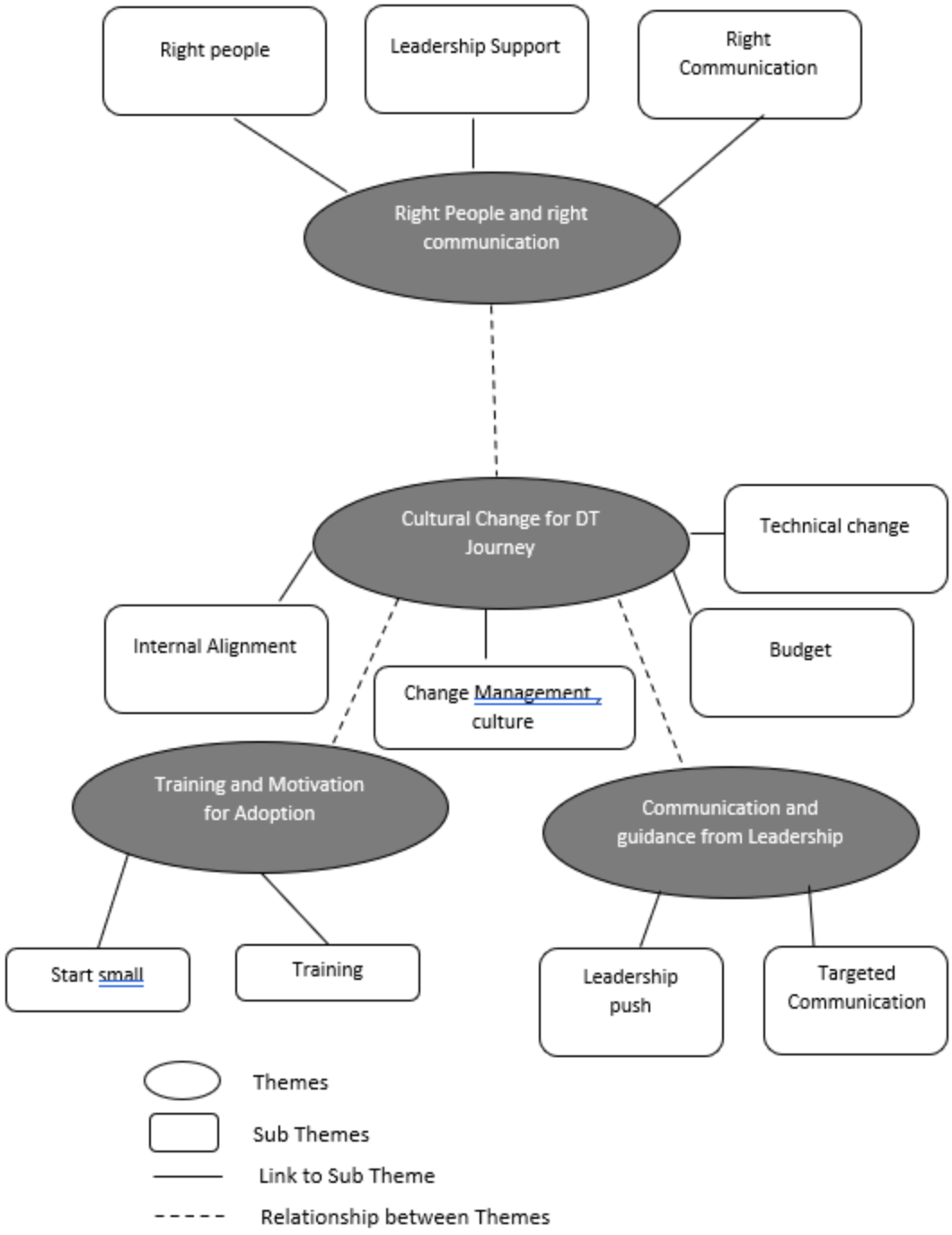

Theoretical Concepts – emergence from saturated categories and themes
Level 3 Coding
Axial/Thematic Coding
Previous coding is studied to develop highly refined themes
Level 2 – Focused coding, Category Development
Level 2 coding re-examines Level 1 codes and further focusses the data
Level 1 Coding - Initial Coding, Open coding /Large Quantities of raw qualitative data are focused and labelled during Level 1 coding
7 Themes
23 concepts (highly refined themes)
152 codes
1200 Codes

Thematic Map linking the 7 themes identified and also mapping the sub themes with these themes is defined below. The detailed theme definition and essays on themes has been covered in the next chapter.

Thematic Map







Thematic Map between the Themes and sub themes

Source : Author's own interpretation

Chapter 8 Research Findings

From the research methodology and data analysis covered in the above chapters, below themes were generated using the Delve Tool. The detailed first order codes, second order concepts and themes are tabulated in the Appendix section. Below are the themes generated from the analysis which are discussed in

Themes Generated

Theme 1 –Digital Transformation which leads to improvement in internal KPIs gets stronger support from internal stakeholders and leadership

Theme 2 – Pandemic accelerated the digital transformation journey but was not a trigger to the journey

Theme 3 - Right people and right communication with support from Leadership is important for organizations to embark on digital transformation journey

Theme 4 – Cultural change is imperative to be digitally ready for digital transformation journey in organizations

Theme 5 - Communication and guidance from leadership for adoption of digital initiatives in organizations

Theme 6 – Trainings and motivation are vital for adoption of digital initiatives

Theme 7 - Tracking adoption is important to measure success of digital initiatives in organizations

Observations and Gaps found in the research, as documented in Chapter 3, were linked to the Themes generated above. The below paragraph maps the observations to the gaps and the themes generated.

- **Observation**: Research suggests the critical drivers for embarking on the digital transformation journey are – Digital technologies, digital capabilities, strategies, values, and business models
- **Gap 1**: There is limited study on how the digital culture moderates the organization's readiness and adoption of digital initiatives in organizations **(Theme 1 and 4)**

- **Observation:** The paper has findings on the four cultural characteristics of Robbins 7 digital culture characteristics
- **Gap 2**: Stability, Attention to Detail, and Outcome Orientation are the 3 of the seven primary characteristics not touched upon by Kollmann, Tobias & Kuckertz, Andreas & Breugst, Nicola in Organizational Readiness and the Adoption of Electronic Business when studying dependency of Organization readiness on adoption of initiatives **(Theme 1, 3, 5, 7)**

- **Observation**: Drivers of digital transformation, the Role of digital readiness in the digital transformation journey, and the adoption of digital initiatives are studied in silos in the literature
- **Gap 3**: There is limited literature on the interdependency of these studies to understand the end-to-end journey of digital transformation in organizations **(Themes 1,2,3,4,5,6,7)**
- **Observation**: The research published by Kollmann, Tobias & Kuckertz, Andreas & Breugst, and Nicola is restricted to 29 European countries
- **Gap 4**: The research does not look at other countries from the same lens

Chapter 9 Triangulation Study

After the study and the identification of themes, validating the findings using a triangulation study was essential. Triangulation in qualitative research is using various methods or different sources to understand the theory comprehensively. It is also viewed as a qualitative research strategy to test the validity by converging information from different sources. Increasingly, qualitative method triangulation is considered a strategy for a more detailed comprehension of the theory or phenomenon.

Research triangulation refers to the process that increases the credibility and validity of research (Noble & Heale, 2019). Triangulation makes use of mixed methods in order to validate the research findings. Triangulation is not the same as mixed methods. The mixed method is the process of using qualitative and quantitative methodology in research. Triangulation, conversely, describes how researchers use different approaches to get the information and analyze the findings. (Social Sciences Research Laboratories, 2018); thus establishing validity and credibility.

How Triangulation was achieved

Findings and themes generated from the research were mapped to the findings observed from literature and reports. Using the color coding below, it was observed that research findings were mapped to literature and reports.

After the analysis, the themes below were highlighted to be discussed as part of the focus group discussion.

- **Theme 1:**Pandemic accelerated the digital transformation journey but was not a trigger to the journey
- **Theme 2:**Training and motivation are vital for the adoption of digital initiatives
- **Theme 3:**Competitive pressure to adopt e-business is the most critical motivation

Focused Group Panel Selection

Panelists were selected for focused group discussion using convenience sampling. The panel was ensured to consist of practitioners who have experience in industry across functions and academicians who have academic experience and knowledge in this area. The panel group also consists of interviewers who have been interviewed earlier and those who will be spoken to for the first time.

Chapter 10 Conclusion and Discussion

Digital Transformation is not only about tech; it is more about people. It is essential to use this to drive many efficiencies, but organizations must be cautious of the consequences it may bring. Organization restructuring also happens often, and people may also lose jobs. Many organizations globally are embracing digital transformation to stay relevant and competitive. Embracing digital technology or embarking on a digital transformation journey means integrating digital technology into various organization operations and ranging from customer interaction to internal processes. However, not all digital transformation stories are successful for an organization. Few organizations do not see the light of the success of digital transformation and have to face challenges as they embark on this journey. Digital transformation success depends on digital readiness and adoption of digital technology in the people and processes of the organization as a whole, and it is not specific to any department.

While digital technologies enhance and accelerate work processes and improve business operational processes, many believe that employees might not keep pace with this digital high-speed train and feel left behind. It is uncertain how such an interchange is considered and how firms could handle linked struggles.

How would one measure if a digital transformation journey has failed - While specific alterations and updates of metrics usually happen when a firm embarks upon this journey of digitization and digitalization phases (e.g., measuring website clicks, video views, and mobile downloads after the introduction of online and mobile channels), overall outcome-related metrics which are more on like ROI, profitability and revenue growth, typically remain prominent for firms that engage in digitization and digitalization (Peter C. Verhoefa, Thijs Broekhuizena, Yakov Bartb, Abhi Bhattacharya, John Qi Donga, Nicolai Fabiana, Michael Haenleinc).

The section below discusses two case studies: one on the success of digital transformation in an organization (HP) and one on the failure of the same journey for a different organization (GE).

References

Alexander L. George and Andrew Bennett Cambridge, MA: MIT Press, 2005. O'Shaughnessy, J. (2007). Book Reviews: Case Studies and Theory Development in the Social Sciences:Journal of Macromarketing, 27(3), 320-323

Abels, G., & Behrens, M. (2009). Interviewing experts in political science: A reflection on gender and policy effects based on secondary analysis. In Interviewing experts (pp. 138-156). London: Palgrave Macmillan UK

Anthony Abbatiello, Sarah Vassy, and Nathaniel Paynter, 2017 https://dupress.deloitte.com/dup-us-en/focus/industry-4-0/building-a-culture-of-responsibility

Baraldi, E., & Nadin, G. (2006). The challenges in digitalising business relationships. The construction of an IT infrastructure for a textile-related business network. Technovation, 26(10), 1111-1126

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. The qualitative report, 13(4), 544-559

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. V. (2013). Digital business strategy: toward a next generation of insights. MIS quarterly, 471-482

Bogner, A., Littig, B., & Menz, W. (2018). Generating qualitative data with experts and elites. The SAGE handbook of qualitative data collection, 652-667

Bryant, A., & Charmaz, K. (2007). Grounded theory in historical perspective: An epistemological account. The SAGE handbook of grounded theory, 31-57

Cameron, A. C., & Trivedi, P. K. (1990). Regression-based tests for overdispersion in the Poisson model. Journal of econometrics, 46(3), 347-364

Carcary, M., Doherty, E., & Conway, G. (2016, September). A dynamic capability approach to digital transformation: a focus on key foundational themes. In The European Conference on Information Systems Management (p. 20). Academic Conferences International Limited

Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. Long range planning, 43(2-3), 195-215

Chan, J. H., & Reiner, D. (2019). Evolution in inter-firm governance along the transport biofuel value chain in Maritime Silk Road countries. Transportation Research Part E: Logistics and Transportation Review, 122, 268-282

Chanias, S., & Hess, T. (2016). Understanding digital transformation strategy formation: Insights from Europe's automotive industry.

Chen, J. Y., He, L. H., Jiang, Y. M., Wang, Y., Joyce, D. C., Ji, Z. L., & Lu, W. J. (2008). Role of phenylalanine ammonia-lyase in heat pretreatment-induced chilling tolerance in banana fruit. Physiologia Plantarum, 132(3), 318-328

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. Strategic management journal, 35(1), 1-23.

Chiesa, V., & Frattini, F. (2009). Evaluation and performance measurement of research and development: techniques and perspectives for multi-level analysis. Edward Elgar Publishing

Clark, K. R., & Vealé, B. L. (2018). Strategies to enhance data collection and analysis in qualitative research. Radiologic technology, 89(5), 482CT-485CT

Clarke, V., & Braun, V. (2017). Thematic analysis. The journal of positive psychology, 12(3), 297-298

Crabtree, B. F. (1999). Doing qualitative research. Sage

Deline, M. B. (2019). Framing resistance: identifying frames that guide resistance interpretations at work. Management Communication Quarterly, 33(1), 39-67.

Donalek, J. G. (2004). Phenomenology as a qualitative research method. Urologic nursing, 24(6)

Dougherty, D., & Dunne, D. D. (2012). Digital science and knowledge boundaries in complex innovation. Organization Science, 23(5), 1467-1484

Downes, L., & Nunes, P. (2013). Big bang disruption. Harvard business review, 44-56

Ebert, C., & Duarte, C. H. C. (2016, September). Requirements engineering for the digital transformation: Industry panel. In 2016 IEEE 24th International Requirements Engineering Conference (RE) (pp. 4-5). IEEE

Fichman, R. G., Dos Santos, B. L., & Zheng, Z. (2014). Digital innovation as a fundamental and powerful concept in the information systems curriculum. MIS quarterly, 38(2), 329-A15

Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2014). Embracing digital technology: A new strategic imperative. MIT sloan management review, 55(2), 1

Fomin, F. V., Kratsch, D., & Woeginger, G. J. (2005). Exact (exponential) algorithms for the dominating set problem. In Graph-Theoretic Concepts in Computer Science: 30th International Workshop, WG 2004, Bad Honnef, Germany, June 21-23, 2004. Revised Papers 30 (pp. 245-256). Springer Berlin Heidelberg

Garzoni, A., De Turi, I., Secundo, G. and Del Vecchio, P. (2020), "Fostering digital transformation of SMEs: a four levels approach", Management Decision, Vol. 58 No. 8, pp. 1543-1562. https://doi.org/10.1108/MD-07-2019-0939

Geoff Easton, Critical realism in case study research, Industrial Marketing Management, Volume 39, Issue 1, 2010, Pages 118-128,

Giorgi, A. (2009). The descriptive phenomenological method in psychology: A modified Husserlian approach. Duquesne university press

Glaser, B., & Strauss, A. (2017). Discovery of grounded theory: Strategies for qualitative research. Routledge

Glesne, C., & Peshkin, A. (1992). Becoming qualitative researchers: An introduction. White Plains, NY: Longman

Gössling, S., Scott, D., & Hall, C. M. (2020). Pandemics, tourism and global change: a rapid assessment of COVID-19. Journal of sustainable tourism, 29(1), 1-20

Grandon, E., & Pearson, J. M. (2004). E-commerce adoption: perceptions of managers/owners of small and medium sized firms in Chile. Communications of the association for information systems, 13(1), 8

Gray, J. R., Grove, S. K., & Sutherland, S. (2016). Burns and grove's the practice of nursing research-E-book: Appraisal, synthesis, and generation of evidence. Elsevier Health Sciences

Green J., Thorogood N. 2004 Qualitative methods for health research London, Sage Publications

Halcomb, E. J., & Davidson, P. M. (2006). Is verbatim transcription of interview data always necessary?. Applied nursing research, 19(1), 38-42

Hammer, M. (2007). The Process Audit. Harvard Business Review, 85, 111-123

Hanna, N. K. (2016). Mastering Digital Transformation: Towards a Smarter Society, Economy, City and Nation. UK: Emerald

Hess, W., Kohler, D., Rapp, H., & Andor, D. (2016, May). Real-time loop closure in 2D LIDAR SLAM. In 2016 IEEE international conference on robotics and automation (ICRA) (pp. 1271-1278). IEEE

Iansiti, M., & Lakhani, K. R. (2014). Digital Ubiquity: How Connections. Sensors, and Data Are revolutionizing business

Ishak, Noriah Mohd., "An Analysis of Parental and Peer Attachment and its Determinant Factors: A Test of Attachment Theory on Malaysian Students at American Universities" (1999). Dissertations. 1512.

Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. Journal of advanced nursing, 72(12), 2954-2965

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). Strategy, not technology, drives digital transformation. MIT Sloan Management Review

Karabag, S. F. (2020). An unprecedented global crisis! The global, regional, national, political, economic and commercial impact of the coronavirus pandemic. Journal of Applied Economics and Business Research, 10(1), 1-6

Karlsson, C., Taylor, M. and Taylor, A. (2010), "Integrating new technology in established organizations: A mapping of integration mechanisms", International Journal of Operations & Production Management, Vol. 30 No. 7, pp. 672-699

Kodama, M. (2020). Digitally transforming work styles in an era of infectious disease. International Journal of Information Management, 55, 102172

Kollmann*, T., Kuckertz, A., & Breugst, N. (2009). Organizational readiness and the adoption of electronic business: The moderating role of national culture in 29 European countries. ACM SIGMIS Database: the DATABASE for Advances in Information Systems, 40(4), 117-131

Lahrmann, G., Marx, F., Winter, R., & Wortmann, F. (2011, January). Business intelligence maturity: Development and evaluation of a theoretical model. In 2011 44th Hawaii International Conference on System Sciences (pp. 1-10). IEEE.

Lai, M. L., & Choong, K. F. (2010). Motivators, barriers and concerns in adoption of electronic filing system: survey evidence from Malaysian professional accountants. American journal of applied sciences, 7(4), 562-567

Lancaster, T. (2023). Artificial intelligence, text generation tools and ChatGPT–does digital watermarking offer a solution?. International Journal for Educational Integrity, 19(1), 10

Lange, M., Mendling, J., & Recker, J. (2016). An empirical analysis of the factors and measures of Enterprise Architecture Management success. European Journal of Information Systems, 25, 411-431

Leininger, M. M. (1985). Ethnography and ethnonursing: Models and modes of qualitative data analysis. In M. M. Leininger (Ed.), Qualitative research methods in nursing (pp. 33-72). Orlando, FL: Grune& Stratton.

Lesser, I. A., & Nienhuis, C. P. (2020). The impact of COVID-19 on physical activity behavior and well-being of Canadians. International journal of environmental research and public health, 17(11), 3899

Leviäkangas, P. (2016). Digitalisation of Finland's transport sector. Technology in Society, 47, 1-15

Li, F., Nucciarelli, A., Roden, S., & Graham, G. (2016). How smart cities transform operations models: A new research agenda for operations management in the digital economy. Production Planning & Control, 27(6), 514-528.

Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitization and big data analytics: A research agenda. The journal of strategic information systems, 24(3), 149-157

Looi, H. C. (2005). E-commerce adoption in Brunei Darussalam: A quantitative analysis of factors influencing its adoption. Communications of the association for information Systems, 15(1), 3

Loubere, N. (2017). Questioning transcription: The case for the systematic and reflexive interviewing and reporting (SRIR) method. In Forum Qualitative Sozialforschung/Forum: Qualitative Social Research (Vol. 18, No. 2, p. 22). DEU

Lowe, S. D., & Lowe, M. E. (2018). Ecologies of faith in a digital age: Spiritual growth through online education. InterVarsity Press

Lucas, H. C. et.al., (2013); Impact Research On Transformational Information Technology: An Opportunity to Inform New Audiences; MIS Quarterly, Vol 37 No. 2, Pp. 371-382

Mangematin, V., & Nesta, L. (1999). What kind of knowledge can a firm absorb?. International Journal of Technology Management, 18(3-4), 149-172

"Margaret Rouse (2005) ICT (Information and Communications Technology).

http://searchcio.techtarget.com/definition/ICT-information-and-communications-technology-or-technologies"

Mariano, S., & Walter, C. (2015). The construct of absorptive capacity in knowledge management and intellectual capital research: content and text analyses. Journal of Knowledge Management, 19(2), 372-400

Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. Business & information systems engineering, 57, 339-343

Maxwell, J. A. (2012). A realist approach for qualitative research. Sage

Molla, A., & Licker, P. S. (2005). eCommerce adoption in developing countries: a model and instrument. Information & management, 42(6), 877-899

Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. Nursing research, 40(2), 120-123

Moustakas, C. (1994). Phenomenological research methods. Sage publications

Nahar Abdullah, S. (2006). Directors' remuneration, firm's performance and corporate governance in Malaysia among distressed companies. Corporate Governance: The international journal of business in society, 6(2), 162-174

Noble, H., & Heale, R. (2019). Triangulation in research, with examples. Evidence-based nursing, 22(3), 67-68

Oestreicher-Singer, G., & Zalmanson, L. (2013). Content or community? A digital business strategy for content providers in the social age. MIS quarterly, 591-616

Orr, G. (2003). Diffusion of innovations, by Everett Rogers (1995). Retrieved January, 21, 2005

Pagani, M., & Pardo, C. (2017). The impact of digital technology on relationships in a business network. Industrial Marketing Management, 67, 185-192

Pedrini, C.N., Frederico, G.F.: Information technology maturity evaluation in a large Brazilian cosmetics industry. Int. J. Bus. Adm. 9, 15 (2018)

Peffers, K., Gengler, C. E., & Tuunanen, T. (2003). Extending critical success factors methodology to facilitate broadly participative information systems planning. Journal of management information systems, 20(1), 51-85

Peter, C. (2021). Verhoefa, Thijs Broekhuizena, Yakov Bartb, Abhi Bhattacharyaa, John Qi Donga, Nicolai Fabiana, Michael Haenleinc. Digital transformation: A multidisciplinary reflection and research agenda. Journal of Business Research Volume, (122), 889

Pfoser, S., Treiblmaier, H., & Schauer, O. (2016). Critical success factors of synchromodality: Results from a case study and literature review. Transportation Research Procedia, 14, 1463-1471

Piccinini, E., Hanelt, A., Gregory, R., & Kolbe, L. (2015). Transforming industrial business: The impact of digital transformation on automotive organizations

Pillay, K. N. (2012). e-Government in South Africa: Predictors to failure and success (Doctoral dissertation).

Poetz, M. K., & Schreier, M. (2012). The value of crowdsourcing: can users really compete with professionals in generating new product ideas?. Journal of product innovation management, 29(2), 245-256

Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. Harvard business review, 92(11), 64-88

Ramaswamy, V., & Ozcan, K. (2016). Brand value co-creation in a digitalized world: An integrative framework and research implications. International Journal of Research in Marketing, 33(1), 93-106

Resnick, M. (2002). Rethinking learning in the digital age

Richardson, J. C., & Godfrey, B. S. (2003). Towards ethical practice in the use of archived transcripted interviews. Int. J. Social Research Methodology, 6(4), 347-355

Riemenschneider, C. K., & McKinney, V. R. (2002). Assessing belief differences in small business adopters and non-adopters of web-based e-commerce. Journal of Computer Information Systems, 42(2), 101-107

Riessman, C. K. (2008). Narrative methods for the human sciences. Sage

Robbins, Stephen P, (2010), "Organizational Behavior", Prentice Hall Upper Saddle River: New Jersey

Saldana, J. (2015). The Coding Manual for Qualitative Researchers. Newcastle upon Tyne: Sage.

Samadhiya, K., Sangtani, R., Nogueira, R., & Bala, K. (2022). Insightful advancement and opportunities for microbial bioplastic production. Frontiers in Microbiology, 12, 674864

Sebastian, I. M., Ross, J. W., Beath, C., Mocker, M., Moloney, K. G., & Fonstad, N. O. (2020). How big old companies navigate digital transformation. In Strategic information management (pp. 133-150). Routledge

Setia, Pankaj & Venkatesh, Viswanath & Joglekar, Supreet. (2013). Leveraging Digital Technologies: How Information Quality Leads to Localized Capabilities and Customer Service Performance. MIS Quarterly. 37. 565-590. 10.25300/MISQ/2013/37.2.11

Speziale, H. S., Streubert, H. J., & Carpenter, D. R. (2011). Qualitative research in nursing: Advancing the humanistic imperative. Lippincott Williams & Wilkins

Stake, R. E. (1995). The art of case study research. Sage

Tan, C. W., & Pan, S. L. (2003). Managing e-transformation in the public sector: an e-government study of the Inland Revenue Authority of Singapore (IRAS). European Journal of Information Systems, 12, 269-281

Thordsen, T., Murawski, M., Bick, M. (2020). How to Measure Digitalization? A Critical Evaluation of Digital Maturity Models. In: Hattingh, M., Matthee, M., Smuts, H., Pappas, I., Dwivedi, Y., Mäntymäki, M. (eds) Responsible Design, Implementation and Use of Information and Communication Technology. I3E 2020.

Urueña, A., Hidalgo, A., & Arenas, Á. E. (2016). Identifying capabilities in innovation projects: Evidences from eHealth. Journal of Business Research, 69(11), 4843-4848

V. Venkatraman, The Digital Matrix: New Rules for Business Transformation Through Technology Greystone Books, Vancouver, Canada (2017)

Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: Theoretical foundations and research directions. Journal of service research, 13(3), 253-266

Vendrell-Herrero, F., Bustinza, O. F., Parry, G., & Georgantzis, N. (2017). Servitization, digitization and supply chain interdependency. Industrial marketing management, 60, 69-81

Westerman, G., Bonnet, D., & McAfee, A. (2014). Leading digital: Turning technology into business transformation. Harvard Business Press

Westerman, G., Calméjane, C., Bonnet, D., Ferraris, P., McAfee, A.: Digital Transformation: A Roadmap for Billion-Dollar Organizations, pp. 1–68. MIT Sloan Management, MITCenter for Digital Business and Capgemini Consulting (2011)

Yin, R. K. (1984). Case Study Research: Design and Methods. Newbury Park, CA: Sage.

Yin, R. K. (2009). Case study research: Design and methods (Vol. 5). Sage

Yoo, Y. (2010). Computing in everyday life: A call for research on experiential computing. MIS quarterly, 213-231

Zinder, E., & Yunatova, I. (2016). Synergy for digital transformation: person's multiple roles and subject domains integration. In Digital Transformation and Global Society: First International Conference, DTGS 2016, St. Petersburg, Russia, June 22-24, 2016, Revised Selected Papers 1 (pp. 155-168). Springer International Publishing